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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,651	06/28/2001	Dieter Otto	1589.GLE.PT	4840

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EXAMINER

TRIEU, THERESA

ART UNIT	PAPER NUMBER
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3748

DATE MAILED: 10/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/787,651

Applicant(s)

OTTO, DIETER

Examiner

Theresa Trieu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 33-42,60,91-99,117,118,120 and 121 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

- 6) ☒ Claim(s) 33-42,60,91-99,117,118,120 and 121 is/are rejected.

- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 08/12/2002 is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This Office Action is responsive to the Amendment filed on August 12, 2002.

Claims 33 and 121 have been amended. Thus, claims 33-42, 60, 91-99, 117, 118 and 121 are under consideration in this application.

The arguments with respect to the references applied in the first Office Action were deemed persuasive; however, a new non-final rejection is set forth below.

#### ***Drawings***

1. The proposed drawing changes filed on August 12, 2002 have been approved.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. ***Claims 33, 38-40 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayase et al. (Patent No. 4,929,159) in view of Otto (Patent No. 5,707,222).***

Re claims 33 and 60, as shown in Figure 1, Hayase et al. disclose a vacuum pump comprising: a drivable rotor (1) having a blade in a housing which can be set in rotation, the

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rotor (1) being formed as one piece, the rotor comprising a first longitudinal section (not numbered; however, clearly seen in Fig. 1) configured for being coupled to a drive shaft (10) via which a torque can be transmitted from a drive shaft to the rotor (1) and that the first longitudinal section being formed as one piece with the rotor. However, Hayase et al. fail to disclose the material which makes up the rotor.

Otto teaches that it is conventional in the art to utilize the material being a plastic.

Re claims 38-40, Otto further discloses the rotor has a slot (19) and at least one support having (15, 17) a diameter which is smaller than the rotor diameter in the area of the slot in which the blade is displaceable; the rotor (1) having a diameter and a slot and wherein the rotor has at least one support (15, 17) whose diameter is the same size as the rotor diameter in the area of the slot in which the blade is displaceable.

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the plastic rotor as taught by Otto, to reduce the cost and to provide a lightweight pump, in the Hayase et al. device.

**3. *Claims 34-37, 41, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayase et al. in view of Otto as applied to claim 33 above, and further in view of Hattori et al. (Publication Number JP 61-149594).***

The modified Hayase et al. device disclose the invention as recited above; however, the modified Hayase et al. fail to disclose the cavities extending into the central area of the rotor.

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Re claim 34, Hattori et al. teach that it is conventional in the art to utilize the cavity (19) opening at the edge of the rotor (1); the rotor (1) having at least two cavities (19) which are each introduced from a frontal side of the rotor and that the rotor having at least one closed wall (not numbered; however; clearly seen in Figure 1 and 2) running transversely or essentially transversely to the central longitudinal axis of the rotor (1), the wall separating the cavities (19) from one another in the axial direction. With regard to claims 35-37, 41, and 42, as shown in Figures 2, 3 and 7, Hattori et al. further disclose the cavity is introduced from a position consisting of the group of the drive shaft (3), frontal side of the rotor, and the frontal face of the rotor (2) turned away from the drive; the rotor (2) comprising walls having a slight thickness (see Figure 2); the rotor (2) comprising two wall areas and a transition between the two wall areas of the rotor having a different thickness, and which is continuous; the rotor having at least two cavities (19) disposed next to one another which are separated from one another by a rib (see Figure 7); the rotor (1) having wall areas and wherein the rib is thinner than the rest of the wall areas of the rotor (see Figure 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the rotor having the cavity as taught by Hattori et al., to reduce the weight of the rotor, in the modified Hayase et al. device.

**4. Claims 91- 99, 117, 118, 120 and 121 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayase et al. in view of Otto, and further in view of Hattori et al. (Publication Number JP 61-149594).**

Re claim 91, as shown in Fig. 1, the modified Hayase et al. disclose a drivable rotor (1) configured for rotating a blade (8) in a housing, the rotor being formed as one piece. However, the modified Hayase et al. fail to disclose the plastic rotor and the cavities extending into the central area of the rotor.

Otto teaches that it is conventional in the art to utilize the material being a plastic (see col. 4, line1-2). With regard claims 95-97, 117 and 118, Otto further discloses the rotor has a slot (19) and at least one support having (15, 17) a diameter which is smaller than the rotor diameter in the area of the slot in which the blade is displaceable; the rotor (1) having a diameter and a slot and wherein the rotor has at least one support (15, 17) whose diameter is the same size as the rotor diameter in the area of the slot in which the blade is displaceable. It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the plastic rotor as taught by Otto, to reduce the cost and the to provide a simple manufacturing processes, in the Hayase et al. device.

Re claim 91, Hattori et al. teach that it is conventional in the art to utilize the cavity (19) opening at the edge of the rotor (1); the rotor (1) having at least two cavities (19) which are each introduced from a frontal side of the rotor and that the rotor having at least one closed wall (not numbered; however; clearly seen in Figure 1 and 2) running transversely or essentially

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transversely to the central longitudinal axis of the rotor (1), the wall separating the cavities (19) from one another in the axial direction. With regard to claims 92-94, 98, 99, 120 and 121, as shown in Figures 2, 3 and 7, Hattori et al. further disclose the cavity is introduced from a position consisting of the group of the drive shaft (3), frontal side of the rotor, and the frontal face of the rotor (2) turned away from the drive; the rotor (2) comprising walls having a slight thickness (see Figure 2); the rotor (2) comprising two wall areas and a transition between the two wall areas of the rotor having a different thickness, and which is continuous; the rotor having at least two cavities (19) disposed next to one another which are separated from one another by a rib (see Figure 7); the rotor (1) having wall areas and wherein the rib is thinner than the rest of the wall areas of the rotor (see Figure 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the rotor having the cavity taught by Hattori et al., to reduce the weight of the rotor, in the modified Hayase et al. device.

### *Prior Art*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of six patents.

Cook (Patent Number 3,207,078) discloses a rotary pump.

Cook et al. (Patent Number 3,207,079) disclose a spring loaded end port rotary pump.

Conde et al. (Patent Number 3,335,944) disclose a rotary pump.

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Burenga et al. (Patent Number 3,734,654) disclose a rotary roller pumps.

Brucken (Patent Number 4,144,005) discloses a rotary through vane compressor.

Martin, Sr. (Patent Number 5,421,706) discloses a vane type pump.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theresa Trieu whose telephone number is 703-308-6434. The examiner can normally be reached on Monday-Friday 7:30am- 5:00pm - First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E Denion can be reached on 703-308-2623. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9302 for regular communications and 703-308-9302 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.

TT


October 9, 2002



Theresa Trieu

Patent Examiner

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THOMAS DENION  
SUPERVISORY PATENT EXAMINER  
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